



REMARKS/ARGUMENT

The applicant's attorneys appreciate the Examiner's thorough search and remarks.

Claims 1 and 12 were rejected under 35 U.S.C. §102(b) as anticipated by Phy, U.S. Patent No. 4,688,075. Reconsideration is requested.

Claims 3 and 4 have been cancelled without prejudice.

Claims 1 and 12 both include a step for heating the substrate before placing a singulated die on the same in addition to heating the substrate and the semiconductor die to cure the thin flexible film. Phy does not teach or suggest heating the substrate before placing the die on the same. Moreover, claims 1 and 12 require a "polyimide, insulative" film. Phy only teaches the use of conductive polymers and does not teach or suggest the use of an insulative polyimide film. Reconsideration of claims 1 and 12 is requested.

Claims 2 and 5-11 depend from claim 1 and, therefore, include its limitations. These claims include other limitations, which in combination with those of claim 1 are not shown or suggested by the art of record. Reconsideration of these claims is requested.

With the amendments the application is believed to be in condition for allowance. Such action is earnestly solicited.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Asst. Commissioner for Patents, Washington, D.C. 20231, on November 6, 2001:

Samuel H. Weiner

Name of applicant, assignee or
Registered Representative

Signature

November 6, 2001

Date of Signature

Respectfully submitted,

Samuel H. Weiner

Registration No.: 18,510

OSTROLENK, FABER, GERB & SOFFEN, LLP

1180 Avenue of the Americas

New York, New York 10036-8403

Telephone: (212) 382-0700



APPENDIX B

VERSION WITH MARKINGS TO SHOW CHANGES MADE
37 C.F.R. § 1.121(b)(iii) AND (c)(ii)

CLAIMS:

1. (Amended) A process of connecting semiconductor die to a substrate having a top surface,

said process comprising the steps of:

providing a thin, flexible, heat curable, polyimide, insulative film which is of a first area;

placing said thin flexible film on a thin semiconductor wafer of a second area, said semiconductor wafer being provided with a plurality of spaced apart semiconductor die, each of said semiconductor die having a respective third area which is substantially less than said first area;

preheating said semiconductor wafer and said thin flexible film to partially cure said thin flexible film, thereby forming adhesion between said thin flexible film and said semiconductor wafer;

thereafter simultaneously singulating both said thin flexible film and said plurality of identical semiconductor die to form individual elements;

heating said substrate;

thereafter [applying] placing at least one of said singulated semiconductor [to] die on the top surface of said heated substrate [surface] with the thin flexible film on said die pressed against said top surface and adhered thereto; and

thereafter heating said [one] semiconductor die and said substrate to a curing temperature to fully cure said thin flexible film to firmly adhere said semiconductor die to said substrate.

12. (Amended) A method of manufacturing a semiconductor device comprising the steps of:

providing a wafer with a plurality of spaced apart semiconductor elements;

placing a thin, flexible, polyimide, insulative film, which is separate from said wafer, and said wafer atop one another to form a film/wafer structure;

preheating said film/wafer structure to partially cure said thin flexible film, thereby forming adhesion between said thin flexible film and said wafer;

singulating said film/wafer structure with said partially cured thin flexible film, thereby forming a plurality of individual semiconductor dies;

heating said substrate:

placing at least one individual semiconductor die with said partially cured thin flexible film, which faces a substrate, on the said heated substrate; and

[heating said individual semiconductor die and said partially cured thin film] applying heat to fully cure said thin flexible film, thereby bonding said individual semiconductor die with said substrate.